

CLAIMS:

We claim:

1. An autonomic rollback system comprising:
 - a registry configured to store meta-data specifying a contemporary state of a system of components;
 - a backup location configured to store a backup copy of the meta-data in said registry specifying a past state of said system of components prior to installing a new component;
 - a monitor programmed to compare the operation of said system of components with a policy defining a nominal state of operation for said system of components; and,
 - a rollback processor coupled to said registry and said backup location and responsive to said monitor, said rollback processor having programming for restoring said registry to said past state when said monitor determines that the operation of said system of components falls outside said nominal state defined within said policy.
2. The autonomic rollback system of claim 1, wherein said system of components resides within an application server.
3. A method for autonomically rolling back a system of components in response to detecting a failure condition in the system, the method comprising the steps of:
 - prior to installing a new component in the system, recording a backup copy of a registry storing contemporary system state information;

installing said new component in the system and recording a new state of the system in said registry;

monitoring the operation of the system and comparing said operation to a policy defining a nominal state of operation for the system; and,

when the operation of the system exceeds said defined nominal state of operation in said policy, removing said installed new component and restoring said registry with said backup copy in order to rollback said new state to a state which had existed prior to said installation of said new component.

4. The method of claim 3, wherein said step of recording a backup copy of a registry comprises the steps of:

recording a listing of all installed components in the system;

defining dependencies between said installed components;

specifying resources within the system which are required by at least one of said installed components; and,

identifying environmental parameter values established to support said installed components.

5. The method of claim 4, wherein said step of recording a new state in said registry comprises the steps of:

recording a listing of all installed components in the system including said new component;

defining dependencies between said installed components;

specifying resources within the system which are required by at least one of said installed components; and,

identifying environmental parameter values established to support said installed components.

6. The method of claim 5, further comprising the steps of:

releasing resources no longer required by any of said installed components; and,
resetting said environmental parameters to values specified within said restored registry.

7. The method of claim 3, further comprising the step of notifying a network administrator when the operation of the system exceeds said defined nominal state of operation in said policy.

8. A machine readable storage having stored thereon a computer program for autonomically rolling back a system of components in response to detecting a failure condition in the system, the computer program comprising a routine set of instructions for causing the machine to perform the steps of:

prior to installing a new component in the system, recording a backup copy of a registry storing contemporary system state information;

installing said new component in the system and recording a new state of the system in said registry;

monitoring the operation of the system and comparing said operation to a policy defining a nominal state of operation for the system; and,

when the operation of the system exceeds said defined nominal state of operation in said policy, removing said installed new component and restoring said registry with said backup copy in order to rollback said new state to a state which had existed prior to said installation of said new component.

9. The machine readable storage of claim 8, wherein said step of recording a backup copy of a registry comprises the steps of:

recording a listing of all installed components in the system;
defining dependencies between said installed components;
specifying resources within the system which are required by at least one of said installed components; and,
identifying environmental parameter values established to support said installed components.

10. The machine readable storage of claim 9, wherein said step of recording a new state in said registry comprises the steps of:

recording a listing of all installed components in the system including said new component;
defining dependencies between said installed components;
specifying resources within the system which are required by at least one of said installed components; and,

identifying environmental parameter values established to support said installed components.

11. The machine readable storage of claim 10, further comprising the steps of:
releasing resources no longer required by any of said installed components; and,
resetting said environmental parameters to values specified within said restored registry.

12. The machine readable storage of claim 8, further comprising the step of notifying a network administrator when the operation of the system exceeds said defined nominal state of operation in said policy.

13. An e-Registry configured to store meta-data specifying a contemporary state of a system of components and coupled to a backup location for storing a backup copy of said meta-data specifying a past state of said system of components prior to installing a new component, said e-Registry further comprising a communicative coupling to a monitor programmed to compare the operation of said system of components with a policy defining a nominal state of operation for said system of components, said e-Registry yet further comprising a communicative coupling to a rollback processor having programming for restoring said e-Registry to said past state when said monitor determines that the operation of said system of components falls outside said nominal state defined within said policy.

14. The e-Registry of claim 13, wherein said e-Registry is disposed within an application server.

15. The e-Registry of claim 13, wherein said e-Registry is disposed externally to a cluster of application servers, and wherein said system of components comprises a set of components deployed about a cluster of application servers.